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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,986	03/01/2002	Gerard O'Driscoll	TD-166	6316
29106	7590	01/25/2005	EXAMINER	
GROOVER & HOLMES BOX 802889 DALLAS, TX 75380-2889			CASCHERA, ANTONIO A	
			ART UNIT	PAPER NUMBER
			2676	
DATE MAILED: 01/25/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/086,986

Applicant(s)

O'DRISCOLL, GERARD

Examiner

Antonio A Caschera

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1-3 and 5-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claimed subject matter of independent claims 1, 5, 13, 19, 22 and 28, in particular, the determining of a plurality of orientation classes the entire line falls into, was not described in the specification in such a way as to enable one skilled in the art to which it pertains, to make and/or use the invention. The claims currently describe what techniques the invention does not utilize in the antialiasing method however it does not describe what techniques the invention does perform.

Although, the applicant has replied with answers to the examiner's previous questions (see Amendment filed 9/23/04), the specification still suffers from enabling one skilled in the art to make and/or use the invention. The applicant has cited an overview of antialiasing and suggests that many of the questions raised by the examiner were specific towards the topic in general. While the prior art setting may be mentioned in general terms, the examiner submits that the essential novelty, the essence of the invention, must be described with greater

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particularity than that exhibited in this application. The exact structure, flow of methods and processing of calculations are left to conjecture. Any analysis of whether a particular claim is supported by the disclosure in an application requires a determination of whether that disclosure, when filed, contained sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the claimed invention. Further, the disclosure fails to show how the various steps are interconnected and controlled so as to obtain the operations suggested by the applicant. Applicant has therefore placed an enormous burden on one of ordinary skill in the art in trying to carry out the claimed invention. The above-noted deficiencies clearly suggests that the descriptive portion of the specification lacks sufficient details to enable one of ordinary skill in the art to carry out the invention without undue experimentation and delay (see *Response to Arguments* below also).

Further, there are no drawings that show how the claimed elements are connected to one another or how they interact with one another. Every claimed limitation is to be shown in the drawings, or the limitation(s) must be canceled from the claim(s). Also, the examiner points out that only one figure (Figure 1) of the applicant's drawings are particularly useful in describing the invention at hand, in view of the claim language, and only pages 1-7 (out of 46) of the specification discuss the limitations as described in the claim language. The examiner suggests including more appropriate diagrams such as flow charts, structural diagrams, etc. that pertain to the claim language in order to better describe the limitations as disclosed in the claims.

No further search can be made until such limitations are further clarified and enabling in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Wong et al. (U.S. Patent 6,172,680 B1).

In reference to claims 1 and 5, Wong et al. discloses a method for providing video graphics processing including anti-aliasing of an object's edges by walking a first and second edge of an object element (see lines 1-5 of abstract). Wong et al. discloses an example of the object to be a triangle and an object element to be the left edge of the triangle (see column 2, lines 57-61). Note, the office interprets the edge of an object element (i.e. an edge of the triangle as disclosed above by Wong et al.) substantially similar to the anti-aliased lines of applicant's claim 1 as polygons are made up of primitive graphical lines. Wong et al. also discloses for two edges of the triangle, or two line segments of the triangle, determining which orientation class the line falls into by edge walking and using an error term and threshold value to determine in which direction, a major or minor direction, to walk (see column 11, lines 40-66 and Figure 6). Wong et al. discloses determining different subpixel masks, which are then processed to produce pixel information for a given pixel (see column 1, lines 36-38); dependent upon the changes in the X and Y traversed directions (see columns 12-13, lines 53-9 and Figure 9). Note, the office interprets the subpixel masks substantially similar in functionality to the sampling patterns of

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applicant's claims and also believes the further processing of subpixel masks, discloses above by Wong et al., to be substantially similar to the sampling of subpixels. Note, in reference to claim 5, the office interprets that the edge walking of Wong et al. substantially determines a direction which is most nearly parallel to a line segment of an object since the edge walking of Wong et al. uses the difference in length between the major axis and the edge (see "error terms" of Figure 6) to decide if and when to walk in the minor direction. Further, since Wong et al. discloses determining different subpixel masks, which are then processed to produce pixel information for a given pixel (see column 1, lines 36-38), dependent upon the changes in the X and Y traversed directions (see columns 12-13, lines 53-9 and Figure 9), the office interprets the subpixel masks having maximal resolution normal to the direction they're calculation is based upon (i.e. major direction) versus the opposite direction (i.e. minor direction).

In reference to claim 2, Wong et al. discloses all of the claim limitations as applied to claim 1 above in addition, Wong et al. discloses the edge walking process to operate in the two directions of X and Y (see column 11, lines 52-66 and Figure 6).

In reference to claim 3, Wong et al. discloses all of the claim limitations as applied to claim 1 above in addition, Wong et al. discloses the creation of the subpixel masks to be dependent upon the slope of the previous direction taken or the orientation of the line determined by edge walking (see columns 12-13, lines 63-9).

In reference to claim 6, Wong et al. discloses all of the claim limitations as applied to claim 5 above in addition, Wong et al. discloses the edge walking process to operate in the two directions of X and Y (see column 11, lines 52-66 and Figure 6).

In reference to claims 7 and 8, Wong et al. discloses all of the claim limitations as applied to claims 1 and 5 respectively above in addition, Wong et al. discloses a video graphics processor including a processing unit for executing the above disclosed methods (see column 12, lines 18-35 and Figures 7 and 8).

Response to Arguments

3. Applicant's arguments, see pages 13-19 of Applicant's Remarks, filed 9/23/04, with respect to the 35 USC 102 rejection of claims 1-3 and 5-8 have been fully considered but they are not persuasive. With the understanding of the invention currently obtainable from little that the specification and amendment filed, 9/23/04 disclose, the office interprets the Wong reference to disclose the claim limitations as previously described above and until the 112 issues are clarified, the office cannot perform a further prior art search as the examiner cannot find prior art for limitations that are not properly explained.

4. Applicant's arguments filed 9/23/04, in reference to the 25 USC 112 1st paragraph, rejection of claims 1-3 and 5-30, have been fully considered but they are not persuasive.

In reference to applicant's response to examiner's previous question #1 (see pages 8-9 of Applicant's Remarks), the applicant has stated that the orientation of the lines is not based upon the sampling pattern but instead the sampling pattern is chosen based upon the determined orientation of the line. The examiner previously posed the question, "how the determining of orientation of lines is based on the sampling pattern?" The above response does not allow the examiner to better understand the invention at hand as the applicant is simply reiterating language found in the claims. The examiner posed the above question to gain a better idea of

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how the invention is functioning to select a sampling pattern when a line orientation is selected. As the examiner applies the question, "how does this invention function?" the answer cannot be clearly attained in view of the current specification or the response given above by the application because it is left to conjecture. Since there is no particular explanation of how the patterns are selected, one may interpret that the patterns are simply randomly selected after an orientation of line is made. The examiner asks how, using what steps, does the current invention select a pattern using the orientation of a line. The examiner also suggests including detailed figures showing block diagrams and/or structural diagrams in order to further describe the invention at hand.

In reference to applicant's response to examiner's previous question #2 (see page 9 of Applicant's Remarks), the applicant has stated that there are many ways to classify a line as either x-major or y-major using the x or y extent of the line, for example determining in which direction, x or y, the line is longer in or determining whether the line is more nearly parallel to a vertical or a horizontal line. The examiner previously posed the question, "how are the lines classified as x-major or y-major depending on the x or y extent of the line?" The above response does not allow the examiner to better understand the invention at hand as the applicant is simply reiterating language found in the claims. The above explanation does not contain any specifics as to how to construct or implement the classification. Terms such as, "could be", in describing essential elements of the claimed invention are merely invitations to experiment. The applicant describes operations in broad terms without sufficient details so as to enable one of ordinary skill in the art to carry out the invention without undue experimentation and delay. Again, the

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examiner suggests including detailed figures showing block diagrams and/or structural diagrams in order to further describe the invention at hand.

In reference to applicant's response to examiner's previous question #3 (see pages 9-10 of Applicant's Remarks), the applicant has stated that only one sampling pattern is used at a time for a given line and references paragraph 11 from the specification which is directed towards one way of computing samples. The examiner previously posed the question, "how are the two sampling patterns implemented?" The above response does not allow the examiner to better understand the invention at hand as it does not contain any specifics as to how to construct or implement the sampling patterns. Again, the above response and specification do not disclose the particulars of the steps required in using the sampling pattern. If the patterns are different for horizontal class lines than for vertical class lines, what are different about them? Are their sizes and/or configurations different? The applicant describes the limitations in broad terms without sufficient details so as to enable one of ordinary skill in the art to carry out the invention without undue experimentation and delay. Again, the examiner suggests including detailed figures showing block diagrams and/or structural diagrams in order to further describe the invention at hand.

In reference to applicant's response to examiner's previous question #4 (see page 10 of Applicant's Remarks), the applicant has stated that there are many ways to determine the orientation of a line whether it'd be determining in which direction, x or y, the line is longer in or determining whether the line is more nearly parallel to a vertical or a horizontal line. The examiner previously posed the question, "is the determination of orientation calculated by summations, logically computed or software based?" The above response does not allow the

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examiner to better understand the invention at hand as the applicant is simply reiterating language found in the claims. The above explanation does not contain any specifics as to how to construct or implement the determination of orientation. Terms such as, "could be", in describing essential elements of the claimed invention are merely invitations to experiment. The applicant describes operations in broad terms without sufficient details so as to enable one of ordinary skill in the art to carry out the invention without undue experimentation and delay. Again, the examiner suggests including detailed figures showing block diagrams and/or structural diagrams in order to further describe the invention at hand.

In reference to applicant's response to examiner's previous question #5 (see page 10 of Applicant's Remarks), the applicant has stated that these calculation could be computed anywhere. The examiner previously posed the question, "what elements are doing these calculations?" The above response does not allow the examiner to better understand the invention at hand as the applicant is simply stating that any computer can perform these calculations. A computer can perform a lot of different calculations in various manners so the above response is not useful in further describing what specific structures in a processing device perform the specific steps disclosed in the claims. The above explanation does not contain any specifics as to how to construct or implement the calculations disclosed within the claims. Terms such as, "could be", in describing essential elements of the claimed invention are merely invitations to experiment. The applicant describes operations in broad terms without sufficient details so as to enable one of ordinary skill in the art to carry out the invention without undue experimentation and delay. Again, the examiner suggests including detailed figures showing block diagrams and/or structural diagrams in order to further describe the invention at hand.

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In reference to applicant's response to examiner's previous question #6 (see page 10 of Applicant's Remarks), the applicant has stated that the lack of usage of an error term or pixel-by-pixel decisions is taken into account when determining an orientation of a line. Such explanation is appreciated as the examiner now better understands the line orientation determination step of the claims.

Also, the applicant is reminded that if an affidavit from one of ordinary skill in the art is submitted in further supporting the applicant's position, all the limitations of the claims that are deemed "prior art" must be referenced and their relations/interconnectivity with other features recited in the claims, must be shown and explained.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, ~~however, will the statutory period for reply expire later than SIX MONTHS from the mailing~~ date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (703) 305-1391. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:00 AM and 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (703)-308-6829.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

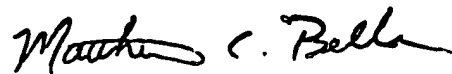
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



aac

1/12/05

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600